Dr. Andreas Walter
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EXPERIENCE

10/2014 - present
Postdoc at the University of California, San Francisco, in the Department of Anatomy
Affiliate at Lawrence Berkeley National Laboratory
Supervisor: Prof. Dr. Larabell

03/2010 - 09/2014
Postgraduate studies in physics at the Max Planck Institute of Biophysics, Frankfurt, in the Department of Structural Biology in collaboration with Carl Zeiss AG (*summa cum laude*)
Supervisor: Prof. Dr. Kühlbrandt
Title of PhD thesis: "Development, Implementation and Practical Aspects of Phase Plates in Electron Cryo-Microscopy"
Technical experience:

- transmission electron cryo-microscopy (TEM) on various microscope systems, optotechnical development
- scanning electron microscopy (SEM)
- focused ion beam (FIB), electron beam-induced deposition (EBID)
- surface analysis techniques (X-ray photoelectron spectroscopy, Auger electron spectroscopy)
- programming in *MATLAB* (hardware control, image simulations, image and data analysis)
- finite element method (*Gmsh/Getdp*)
- computer-aided design (*SolidWorks*)

08/2009 - 03/2010
Guest scientist at the European Molecular Biology Laboratory (EMBL), Heidelberg, in the group of Dr. Ellenberg
Further studies on the role of molecular crowding in heterochromatin

09/2009 - 02/2010
Mathematics and physics teacher at the Helene Lange school, Mannheim

EDUCATION

07/2008 - 08/2009
Diploma thesis in physics at EMBL, Heidelberg, in the Department of Biophysics and Cell Biology (1.0)
Supervisor: Dr. Ellenberg
Title of thesis: "Defining the Role of Molecular Crowding in the Formation and Maintenance of Heterochromatin Foci"
Technical experience:

- live cell imaging on various confocal systems
- fluorescence correlation spectroscopy (FCS), photoactivation
- programming in *MATLAB* (image and data analysis)
- molecular biology techniques

09/2003 - 08/2009	Physics diploma with an additional specialisation in biophysics at the Ruprecht Karls University of Heidelberg (1.3)
03/2007	Internship at the Saint Petersburg State University, Russia, in the Department of Molecular Biophysics Supervisor: Prof. Dr. Kasyanenko Investigation of the interaction of platinum(II) complexes with DNA
08/2006 - 04/2007	Studies of biophysics and examinations at the Saint Petersburg State University, Russia

FELLOWSHIPS

08/2006 - 02/2007	Baden-Württemberg Scholarship granted for studies at the Saint Petersburg State University

TUTORIALS

09/2005 - 09/2009	Student assistant at the University of Heidelberg Supervision of physics practical courses for biologists and physicists

CONFERENCES

- Invited talk, University of Basel, Biozentrum, Switzerland (2014)
- Invited talk, Spanish National Center for Biotechnology, Biocomputing Unit, Madrid, Spain (2014)
- Invited talk, UC Berkeley, Department of Physics, USA (2014)
- Invited talk, Microscopy & Microanalysis, Phoenix, USA (2012)
- Poster presentation, Gordon Research Conference on three-dimensional electron microscopy, Les Diablerets, Switzerland (2012)
- Poster presentation, Microscopy Conference, Kiel, Germany (2011)
- Poster presentation, Zeiss Libra 200 Workshop, Oberkochen, Germany (2011)
- Poster presentation, European Symposium on current developments in TEM, Freiberg, Germany (2011)

PUBLICATIONS

- **Walter, A.**, Steltenkamp, S., Schmitz, S., Holik, P., Sachser, R., Huth, M., Rhinow, D., Kühlbrandt, W., "Towards an optimum design for electrostatic phase plates." (in review)
- Gold, V., Raffaele, I., **Walter, A.**, Pfanner, N., van der Laan, M., Kühlbrandt, W., "Visualizing active membrane protein compexes by electron cryotomography." *Nature Communications* (2014)

- Walter, A., Chapuis, C., Huet, S., Ellenberg, J., "Crowded chromatin is not sufficient for heterochromatin formation and not required for its maintenance." *Journal of Structural Biology* (2013)
- Daum, B., Walter, A., Horst, A., Osiewacz, H., Kühlbrandt, W., "Age-dependent dissociation of ATP synthase dimers and loss of inner-membrane cristae in mitochondria." *Proc. Natl. Acad. Sci. USA, 110 15301-15306* (2013)
- Walter, A., Muzik, H., Vieker, H., Turchanin, A., Beyer, A., Gölzhäuser, A., Lacher, M., Steltenkamp, S., Schmitz, S., Holik, P., Kühlbrandt, W., Rhinow, D., "Practical aspects of Boersch phase contrast electron microscopy of biological specimens." *Ultramicroscopy, 116 62-72* (2012)
- Barton, B., Rhinow, D., Walter, A., Schröder, R., Benner, G., Majorovits, E., Matijevic, M., Niebel, H., Müller, H., Haider, M., Lacher, M., Schmitz, S., Holik, P., Kühlbrandt, W., "In-focus electron microscopy of frozen-hydrated biological samples with a Boersch phase plate." *Ultramicroscopy 111 1696-1705* (2011)

OTHER INTERESTS

06/2002 - 07/2003	Civil service in the institution Tiquipaya Wasi for homeless children, Cochabamba, Bolivia
09/2003 - present	Member and board member of the German organisation "Hilfe für verlassene Kinder e. V.", support association of Tiquipaya Wasi

Languages

- German – mother tongue
- English – business fluent
- Spanish – business fluent
- French – fluent
- Russian– very good
- Japanese – basic
- Latin – proficiency certificate

REFEREES

- Prof. Dr. Werner Kühlbrandt
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  Max-von-Laue-Straße 3, D-60438 Frankfurt
  Phone.: +49 69 6303 3001, Fax: +49 69 6303 3002
  Email: werner.kuehlbrandt@biophys.mpg.de

- Dr. Jan Ellenberg
  Head of the Cell Biology and Biophysics Unit, EMBL
  Meyerhofstr.1, D-69117 Heidelberg
  Phone.: +49 6221 387 0, Fax: +49 6221 387 8306
  Email: jan.ellenberg@embl.de